Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60 950-22
Information technology equipment
Safety – Part 22: Equipment to be installed outdoors

Report Reference No......:	28118771 002
Date of issue.....:	30/10/2020
Total number of pages.....	35
CB Testing Laboratory.....:	TÜV RHEINLAND ITALIA S.r.l.
Address.....:	Via Mattei, 3 – 20010 Pogliano Milanese (MI) - Italy
Applicant's name.....:	aesys
Address.....:	Aesys S.p.A Via Pastrengo 7C 24068 Seriate (Bg) - Italy
Test specification:	
Standard .....:	IEC 60 950-22 : 2005 (1st Edition)
Test procedure .....:	TÜV Scheme
Non-standard test method……..:	N/A
Test Report Form No......:	IEC60950_22A
Test Report Form(s) Originator .....:	The Standards Institution of Israel Ltd.
Master TRF.....:	Dated 2007-03

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Test item description..... :	Display used for information system
Trade Mark .....:	aesys
Manufacturer .....:	Aesys S.p.A
Model/Type reference.....:	**Basic model:** Compact TFT 32" Outdoor, code: 993201900100 **Derived model:** D_CPTOU3210-LS-P1L3ARIE-H- - 4G1-TTSPFA-Z0, code: 993201931301 D_CPTOU3210-LS-P1L3ARIE-H- - 4G1-TTSPFA-Z1, code: 993201931302
Ratings.....:	220-240V 50/60Hz 1,6A IP55

Testing procedure and testing location:	
☒ **Testing Laboratory**:	**TÜV RHEINLAND ITALIA S.r.l.**
Testing location/ address.....:	Via Mattei, 3 – 20010 Pogliano Milanese (MI) - Italy
☐ **Associated Test Laboratory:**	
Testing location/ address.....:	
Tested by (name + signature) .....:	Gianluigi Verga /Tester
Approved by (+ signature).....:	Giovanni Molteni /Reviewer
☐ Testing procedure: TMP	
Tested by (name + signature) .....:	
Approved by (+ signature).....:	
Testing location/ address.....:	
☐ Testing procedure: WMT	
Tested by (name + signature) .....:	
Witnessed by (+ signature).....:	
Approved by (+ signature).....:	
Testing location/ address.....:	
☐ Testing procedure: SMT	
Tested by (name + signature) .....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address.....:	
☐ Testing procedure: RMT	
Tested by (name + signature) .....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address.....:	

List of Attachments (including a total number of pages in each attachment):

Attachment I: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES	04 pages
Attachment II: PHOTO DOCUMENTATION	05 pages
Attachment III: GASKETS CUSTOMER DECLARATION	01 page
Attachment IV: COATINGS CUSTOMER DECLARATION	01 page

Summary of testing:

Tests performed (name of test and test clause):

All relevant tests

The phase of sampling / collection of equipment under test is carried out by the customer.(Sampling performed by applicant)

Where not reported and when applicable, the calculation of the measurement uncertainty is available on request

Equipment used for testing is recorded and saved into the company archive as instruments 28118771_002_INS.

It will be made available on request.

Testing location:

TÜV RHEINLAND ITALIA S.r.l.

Via Mattei, 3 – 20010 Pogliano Milanese (MI) - Italy

Summary of compliance with National Differences:

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

☒ **The product fulfils the requirements of**

EN 60950-22:2006 + A11:2008

Copy of marking plate

Basic model :

Derived model :

Test item particulars.....:

Temperature range .....:

Overvoltage category.....: ☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV

IP protection class .....:

Possible test case verdicts:

- test case does not apply to the test object.....: N/A
- test object does meet the requirement .....: P (Pass)
- test object does not meet the requirement .....: F (Fail)

Testing.....:

Date of receipt of test item.....: 30/09/2019 storage 190883 – 07/07/2020 storage 200462/1 - sampling performed by manufacturer.

Date (s) of performance of tests.....: 22/10/2019; 02/10/2020

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with IEC 60950-22. It can only be used together with the IEC 60950-1 requirements.

General product information:

This display can be part, with any other panels similar or of different types, of a system aimed at informing users in transit on rail vehicles of information to travelers on the railway lines, or general information.

Basic model: 993201900100:

Mechanical	
Size:	TFT 32"
Dimensions:	836 (L) x 530 (H) x 160 (D) mm
Estimated Weight	45Kg

Finish Front :	Aluminum, RAL Range, 50% GLOSS, not reflecting MAT, powder coating		
Finish Rear :	Aluminum, RAL Range, 50% GLOSS, not reflecting MAT, powder coating		
Protection grade:	IP55		
Front protection:	Antireflective (both side) Laminated Tempered glass with UV and IR protection (compliance to IK08 5J according to the EN62262)		
Lock system:	Hinged door, polyurethane bi-component vulcanized gasket; Special anti-vandal locks		
Interfaces:	1x Power Supply 1x RJ45 Data Line 1x M6 Additional ground interface 3x SMA connector (for Wireless 2G/3G/4G version, RF antenna & Wi.fi) 1x Audio Output (for further details see the attached mechanical drawing)		
Fixing points:	Monitor : Vesa standard 200x200mm, 4xM8 Female closed holes (for further details see the attached mechanical drawing)	Monitor : Vesa standard 400x400mm, 4xM8 Female closed holes (for further details see the attached mechanical drawing)	Monitor : Vesa standard 400x400mm, 4xM8 Female closed holes (for further details see the attached mechanical drawing)
Other:	Mechanical housing compliant to IK10 20J according to the EN62262		

Electrical	
Size	TFT 32"
Input power supply voltage:	Nominal 220-240V AC
	Range: 198V AC ÷ 264V AC
Input power supply frequency range:	50/60Hz
Protections:	Overload, overvoltage, over temperature
Power Consumption:	Typ.: 130W (@Brightness 70%)
	Max.: 165W (@ Brightness 100%)
	Max.: 325W (@ Brightness 100%, Heating ON)

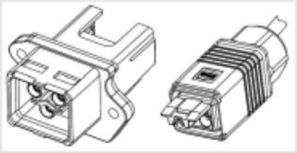
Environmental	
Operating temperature:	-25° ÷ 50° C when installed with Suncover / Sunshade
Thermal management:	At high temperature: - Automatic TFT-LCD matrix brightness linear derating down to maximum 50% with the increase of the environmental temperature - TFT-LCD matrix and PC switched OFF when the highest temperature limit is reached
	At low temperature: - display is switched off when the lowest temperature limit is reached
Operating humidity:	10 % ÷ 95 % R.H. without condensation
Storage temperature:	-20° ÷ 60° Celsius – Ambient temperature 10% ÷ 95% - R.H. at this conditions: - till +40°C @90% R.H. - till +50°C @60% R.H. - till +60°C @40% R.H.
Cooling system:	Direct air exchange with the outside by special filter
Heating system:	Installed
Temperature Sensor	Installed
Light Sensor	Installed
Acceleration Sensor	*Upon request*

Data Communication	
Type of communication:	Copper LAN Ethernet 10/100/1000 Base TX
Protocol type:	Different protocol types supported (according to the software player hosted), SNMP protocol for diagnostic data
Other:	*Upon request:* *- Built-in LAN Ethernet 10/100/1000Base TX to 10/100/1000Base FX Media converter (multimode)* *- Wireless 2G/3G/4G* *- Wi.fi* *(for further details refer to the commercial offer)*

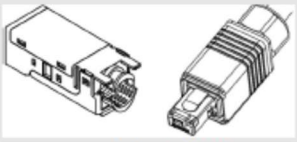
Connectors	
Power supply:	1x Harting PushPull Power 2/0, panel feed-through and connector, 3-poles (2+PE)
Data line:	1x Harting PushPull RJ45 Technology, RJ45-panel jack feed-through
Audio output:	1x Cable Gland
Antenna:	3x SMA Connector
Ground interface:	1x M6 male ground point

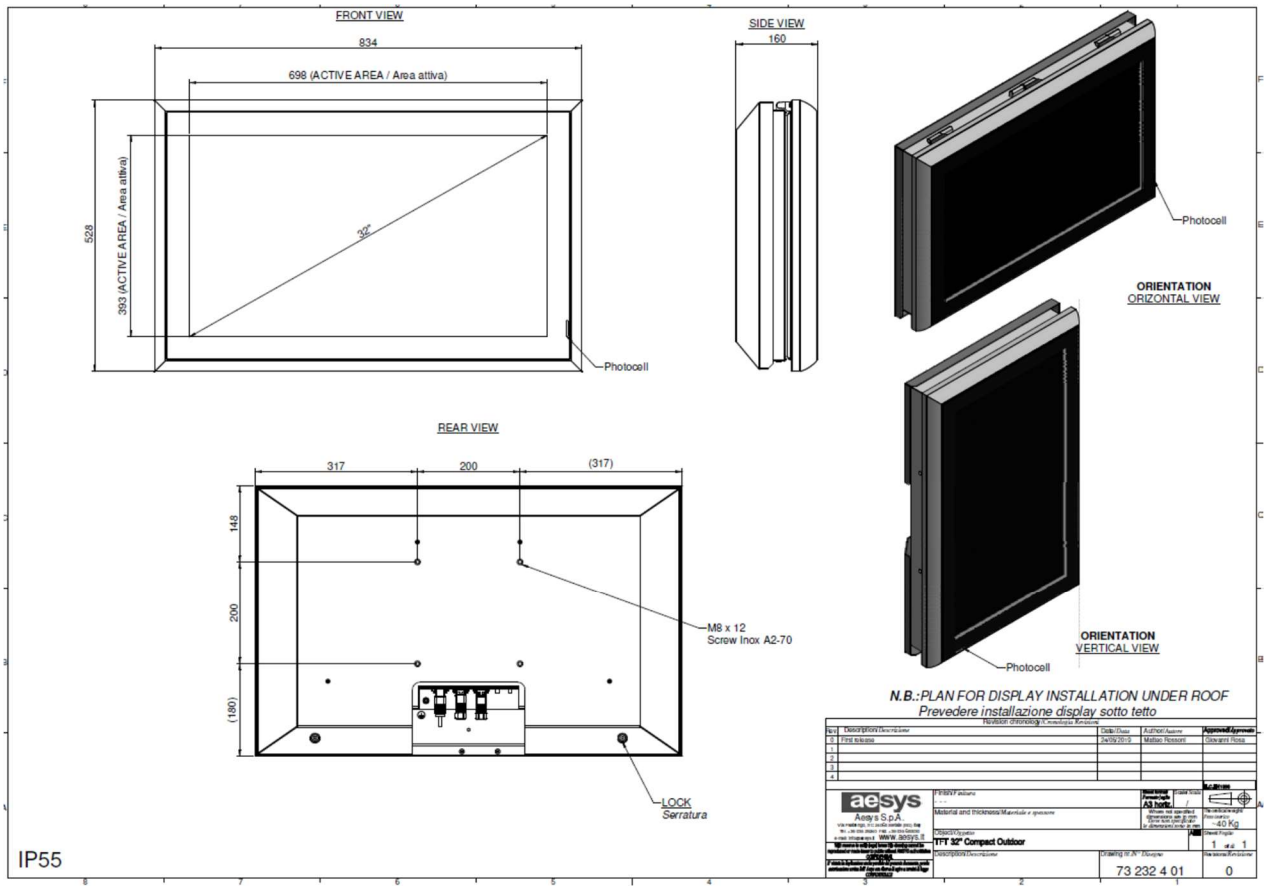
Optical specifications (matrix module)	
Size:	TFT 32"
Format:	16:9
Type:	Normally black
(*) Active area:	698.4 (H) x 392.85 (V) mm
(*) Pixel pitch:	0.36375 x 0.36375 mm x RGB
Pixel format:	1920 (H) x 1080 (V) (Native resolution)
Colour depth:	16.7M colors
Luminance:(on white colour)	1.000 cd/m^2 (typ.) @ Center point
Contrast ratio:	4000 : 1 typ. (with dimming)
Viewing angle (CR > 10):	R/L 178° (typ.) – U/D 178° (typ.)
Response time:	8ms (Typ., Grey-to-Grey)
Backlight Technology:	LED

Power Supply

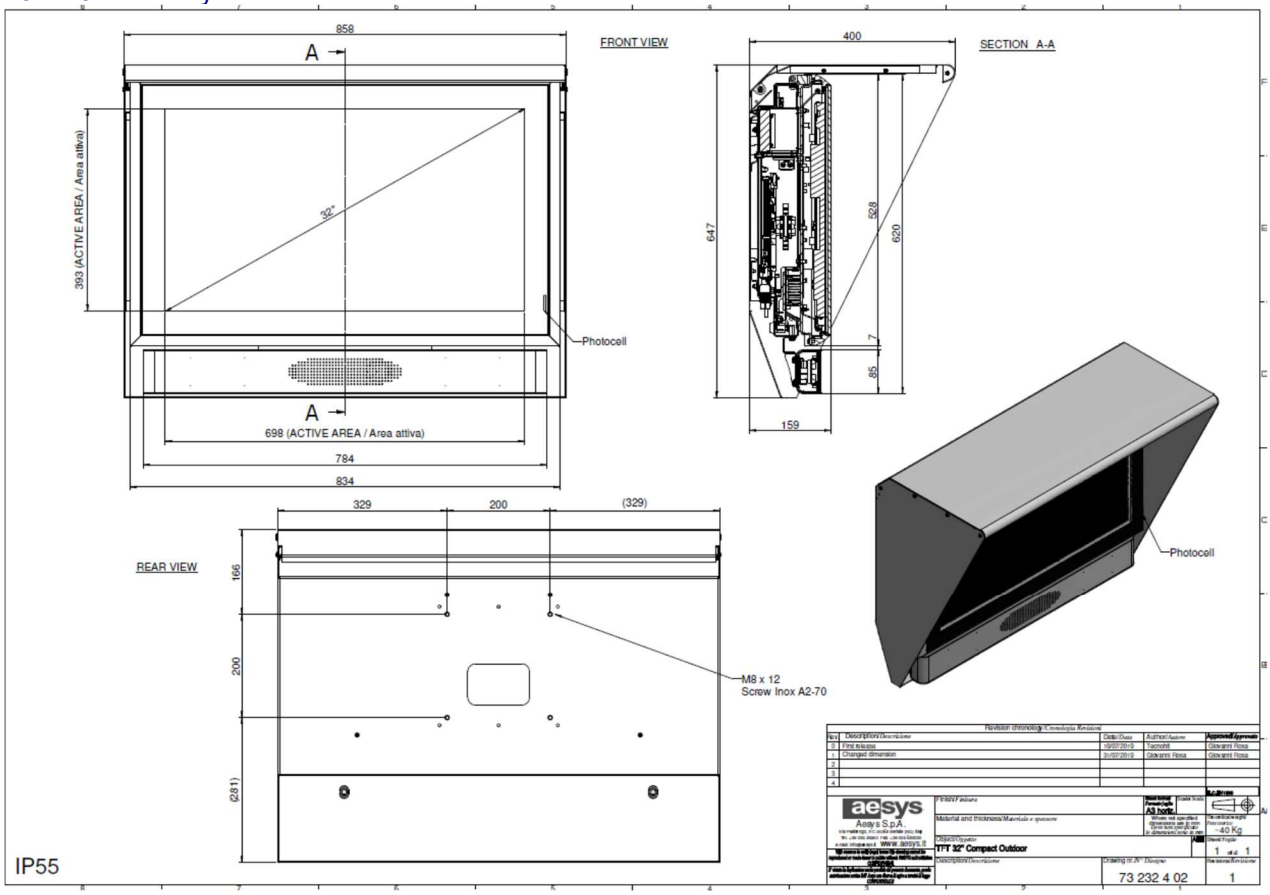
Connector Type	Pin #	Signal	Description
 Harting Push pull V4 Power plug	1	L	Line 230Vac power input
	2	N	Neutral 230Vac power input
	3	GND	Ground

Ethernet data line

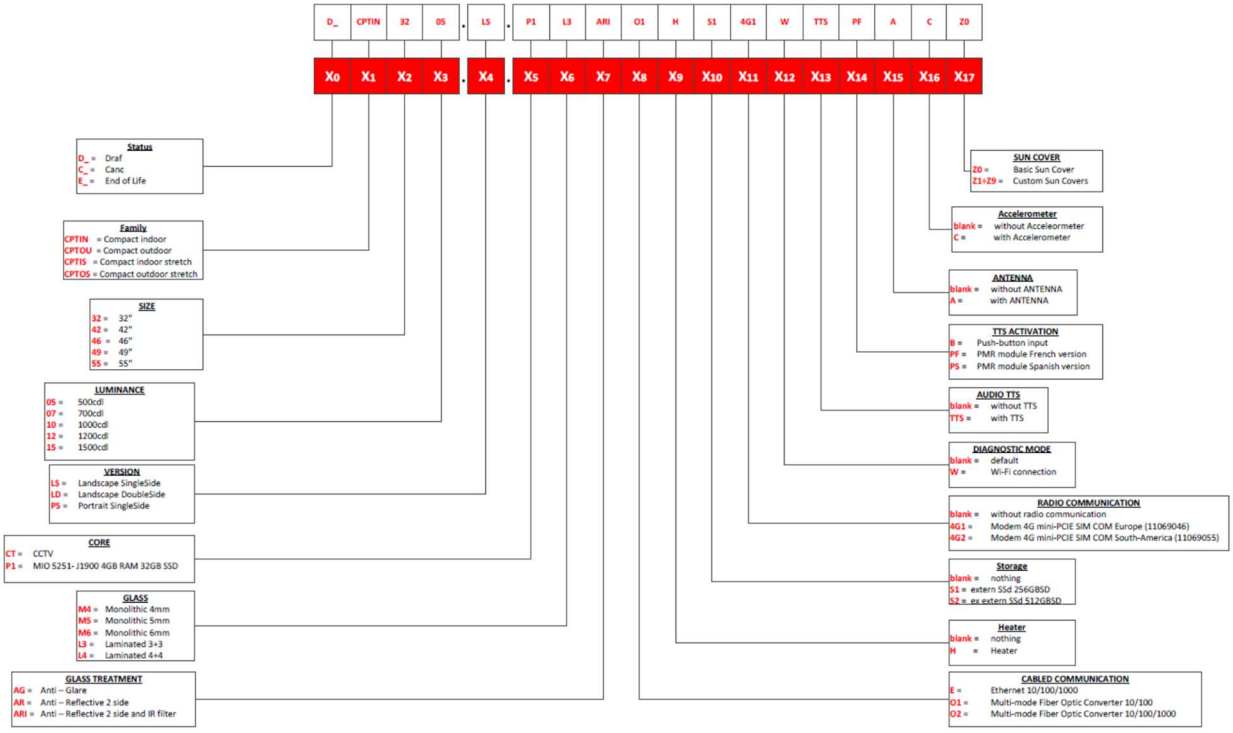
Connector Type	Pin #	Signal	Description
 Harting Push pull V4 RJ45	1	TX+	Transmit Data +
	2	TX-	Transmit Data -
	3	RX+	Receive Data +
	4	BI_DC+ (GHz)	DC+ for GBe
	5	BI_DC- (GHz)	DC- for GBe
	6	RX-	Receive Data -
	7	BI_DD+ (GHz)	DD+ for GBe
	8	BI_DD- (GHz)	DD- for GBe



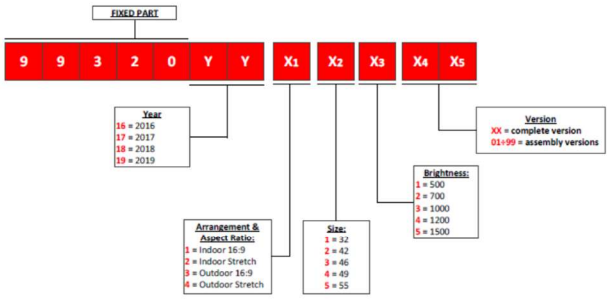
Derived models:
Model 993201931301 difference from basic model only commercial name.
Model 993201931302 difference from basic model added external protection solar light. (see drawing 73 232 4 02 issue by AESYS.



COMPACT FAMILY


D_ CPTIN 32 05 . LS . P1 L3 ARI O1 H S1 4G1 W TTS PF A C Z0
X0 X1 X2 X3 . X4 . X5 X6 X7 X8 X9 X10 X11 X12 X13 X14 X15 X16 X17
Status
D_ = Draf
C_ = Canc
E_ = End of Life
Family
CPTIN = Compact indoor
CPTOU = Compact outdoor
CPTIS = Compact indoor stretch
CPTOS = Compact outdoor stretch
SIZE
32 = 32"
42 = 42"
46 = 46"
49 = 49"
55 = 55"
LUMINANCE
05 = 500cdl
07 = 700cdl
10 = 1000cdl
12 = 1200cdl
15 = 1500cdl
VERSION
LS = Landscape SingleSide
LD = Landscape DoubleSide
PS = Portrait SingleSide
CORE
CT = CCTV
P1 = MIO 5251- J1900 4GB RAM 32GB SSD
GLASS
M4 = Monolithic 4mm
M5 = Monolithic 5mm
M6 = Monolithic 6mm
L3 = Laminated 3+3
L4 = Laminated 4+4
GLASS TREATMENT
AG = Anti – Glare
AR = Anti – Reflective 2 side
ARI = Anti – Reflective 2 side and IR filter
SUN COVER
Z0 = Basic Sun Cover
Z1÷Z9 = Custom Sun Covers
Accelerometer
blank = without Accelerometer
C = with Accelerometer
ANTENNA
blank = without ANTENNA
A = with ANTENNA
TTS ACTIVATION
B = Push-button input
PF = PMR module French version
PS = PMR module Spanish version
AUDIO TTS
blank = without TTS
TTS = with TTS
DIAGNOSTIC MODE
blank = default
W = Wi-Fi connection
RADIO COMMUNICATION
blank = without radio communication
4G1 = Modem 4G mini-PCIE SIM COM Europe (11069046)
4G2 = Modem 4G mini-PCIE SIM COM South-America (11069055)
Storage
blank = nothing
S1 = extern SSd 256GBSD
S2 = ex extern SSd 512GBSD
Heater
blank = nothing
H = Heater
CABLED COMMUNICATION
E = Ethernet 10/100/1000
O1 = Multi-mode Fiber Optic Converter 10/100
O2 = Multi-mode Fiber Optic Converter 10/100/1000

COMPACT FAMILY



IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
4	CONDITIONS FOR OUTDOOR EQUIPMENT		P
4.1	Ambient air temperature		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +40°C	Indicated -25°C ÷ 50°C	P
4.2	AC mains supply		P
	Suitability for the highest Overvoltage Category expected in the installation location		P
	Components used to reduce the Overvoltage Category comply with IEC 61643-series		P
	Reference to installation instructions .....:	See file 993201931301 302 Compact TFT 32 Outdoor - UM [ITA] rev02.pdf	P
4.3	Rise of earth potential		P
	Special earthing conditions		P
	Reference to installation instructions .....:	See file 993201931301 302 Compact TFT 32 Outdoor - UM [ITA] rev02.pdf	P
5	MARKING AND INSTRUCTIONS		P
	Special installation features for protection from conditions in the OUTDOOR LOCATION (see 1.7.2 of IEC 60950-1)		P
	OUTDOOR ENCLOSURE classification according to IEC 60529 (IP Code)	IP55	P
6	PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION		P
6.1	Voltage limits of user-accessible parts in OUTDOOR LOCATIONS (2.2.2 and 2.2.3 of IEC 60950-1 with voltage limits of IEC60950-22)		P
	Voltages under normal conditions (V) .....:	≤ 24 Vdc	P
	Voltages under fault conditions (V).....:	≤ 24 Vdc	P
6.2	Limited current circuits in outdoor locations		N/A
	The requirements of 2.4 of IEC60950-1 apply without change	(see separate test report IEC 60950-1) Power switching supply is separately certified.	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
7	WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS		P
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1		P
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364		N/A
8	CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES		P
8.1	General		P
	Protection against corrosion by use of suitable materials or by application of a protective coating	Axalta Coating System AE03054900520 See Attachment 4	P
	Parts serving as a functional part of an OUTDOOR ENCLOSURE (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the OUTDOOR ENCLOSURE		P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation	Not used to carry current during normal operation	N/A
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of IEC 60950-1 and 8.3 of this standard)	(see separate test report IEC 60950-1 and 8.3 of this report) See separate report EN/IEC 62368-1 (28118771_001 issue by TÜV RHEINLAND ITALIA S.r.l.)	P
8.2	Resistance to ultra-violet radiation		P
	Resistance of non-metallic parts of an OUTDOOR ENCLOSURE to degradation by ultra-violet (UV) radiation		P
	Parts providing mechanical support:	Only metal parts	N/A
	Tensile strength test (ISO 527)	(see appended table 8.2a)	N/A
	Flexural strength test (ISO 178)	(see appended table 8.2b)	N/A
	Parts providing impact resistance:	Only metal parts	N/A
	Charpy impact test (ISO 179)	(see appended tables 8.2c and 8.2.d)	N/A
	Izod impact test (ISO 180)	(see appended tables 8.2e and 8.2.f)	N/A
	Tensile impact test (ISO 8256)	(see appended tables 8.2g and 8.2.h)	N/A
	All parts:	Gasket, Cable gland and plastic parts	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Flammability classification (1.2.12 and annex A of IEC 60950-1)	(see separate test report IEC 60950-1) See separate report EN/IEC 62368-1 (28118771_001 issue by TÜV RHEINLAND ITALIA S.r.l.)	P
8.3	Resistance to corrosion		P
8.3.1	General		P
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants		P
	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N/A
8.3.2	Test apparatus		N/A
	Salt-spray test (IEC 60068-2-11)		N/A
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N/A
8.3.3	Test procedure		N/A
8.3.4	Compliance criteria		N/A
8.4	Bottoms of FIRE ENCLOSURES		P
	Comply with 4.6.2 of IEC 60950-1		P
	Bottom of FIRE ENCLOSURE of OUTDOOR EQUIPMENT mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)		N/A
8.5	Gaskets		P
	If gaskets are used as the method for protection against the ingress of potential contaminants, requirements of 8.5.1 through 8.5.3 apply	See Attachment 3	P
8.5.1	General		P
8.5.2	Oil resistance		N/A
8.5.3	Securing means		P
9	PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE		P
9.1	Protection from moisture (see Table 2)	EN/IEC 60529, IP55	P
9.2	Protection from plants and vermin	No holes	P
9.3	Protection from excessive dust	IP5X	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
10	MECHANICAL STRENGTH OF ENCLOSURES		P
10.1	General		P
10.2	Impact test (4.2.5 of IEC 60950-1)		P
	Compliance criteria:		P
	- after test the level of protection remains in accordance with 9.1of this standard		P
	- after test the requirements of 4.2.1 of IEC 60950-1 are met		P
11	OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES		N/A
	Adequate ventilation in the compartment housing a vented battery, where gassing is possible during normal usage or over-charging	No batteries used	N/A
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N/A
	Hydrogen gas concentration measurement test		N/A
	Measured hydrogen gas concentration (% by volume) ..... :		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) ..... :	≤ 1% by volume	—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) ..... :	≤ 2% by volume	—
	Overcharging of rechargeable battery (see 4.3.8 of IEC 60950-1)	(see separate test report IEC 60950-1)	N/A
A	ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)		N/A
B	ANNEX B, WATER SPRAY TEST (see 9.1)		N/A
C	ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)		N/A
C.1	Test apparatus .....:		N/A
C.2	Mounting of test samples .....:		N/A
C.3	Carbon-arc light-exposure apparatus .....:		N/A
C.4	Xenon-arc light-exposure apparatus .....:		N/A

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
D	ANNEX D, GASKET TESTS (see 8.5)		P
D.1	Gasket tests		P
D.2	Tensile strength and elongation tests (for gaskets that can stretch)	See manufacturer declaration, Attachment 3	P
	Tensile strength (%) .....:		N/A
	Elongation (%) .....:		N/A
	Visible deterioration, deformation, melting, cracking or hardening of the material.....:		N/A
D.3	Compression test (for gaskets with closed cell construction)	See manufacturer declaration, Attachment 3	P
	Initial thickness of the specimen (mm) .....:		N/A
	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:		N/A
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:		N/A
	Thickness of the specimen after test c) (mm), compression set after test c) (%).....:		N/A
	Visible cracks or deterioration .....:		N/A
D.4	Oil immersion test	No these parts	N/A
	Swelling (%).....:		N/A
	Shrinking (%).....:		
E	ANNEX E, RATIONALE		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—
E.10	Explosion hazards		—

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-22:2005 – COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions	P
General	Delete all the “country” notes in the reference document according to the following list: 4.1 Note 3 4.3 Note 8.5 Note 10.2 Note D.3 Note D.4 Note	P

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB	SPECIAL NATIONAL CONDITIONS		N/A
4.1	In **Finland**, **Norway** and **Sweden**, the temperature in winter may be extremely low. For OUTDOOR EQUIPMENT this will demand special design so that the equipment can withstand transport, erection and operation/service at temperatures down to -50°C		N/A
10.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.		N/A
D.3	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.		N/A

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2a)	Tensile strength test (ISO 527)	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)

Arithmetic mean for Set 1 (MPa) .....:	
Arithmetic mean for Set 2 (MPa) .....:	
Retention (%).....:	

Supplementary information:

Separately checked , see Attachment 3

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2b)	Flexural strength test (ISO 178)	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Flexural strength (MPa)	Test sample #	Flexural strength (MPa)

Arithmetic mean for Set 1 (MPa) .....:	
Arithmetic mean for Set 2 (MPa) .....:	
Retention (%).....:	

Supplementary information:

Separately checked , see Attachment 3

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2c)	Charpy impact test (ISO 179) - unnotched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (according to Tables 2 and 3 of ISO 179) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2d)	Charpy impact test (ISO 179) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (according to Tables 2 and 3 of ISO 179) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2e)	Izod impact test (ISO 180) - unnotched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (according to Table 1 of ISO 180) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2f)	Izod impact test (ISO 180) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (according to Table 1 of ISO 180) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2g)	Tensile impact test (ISO 8256) - unnotched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (A or B) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2h)	Tensile impact test (ISO 8256) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C) .....:		—
Test method (A or B) .....:		—
Test conditions (T °C, RH %) .....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment I: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC60950_22A ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-22:2005** **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** INFORMATION TECHNOLOGY EQUIPMENT – SAFETY – PART 22: EQUIPMENT TO BE INSTALLED OUTDOORS			
Differences according to .....: EN 60950-22:2006 + A11:2008			
Attachment Form No.....: EU_GD_IEC60950_22A **Attachment Originator** .....: TÜV SÜD Product Service GmbH **Master Attachment**.....: 2019-10-22			
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	CENELEC COMMON MODIFICATIONS (EN)	
Contents	Add the following annexes: **Annex ZA (normative)** Normative references to international publications with their corresponding European publications **Annex ZB (normative)** Special national conditions	P
General	Delete all the “country” notes in the reference document according to the following list: – 4.1 Note 3 – 4.3 Note – 8.5 Note – 10.2 Note – D.3 Note – D.4 Note	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Bibliography	**Add** the following notes for the standards indicated:		P
	IEC 60364-1	NOTE Harmonized as HD 384.1 S2:2001 (modified).	
	IEC 60364-4-44	NOTE Partly harmonized as HD 60364-4-443:2006 (modified), HD 384.4.442 S1:1997 (related) and R064-004:1999 (IEC 60364-4-444:1996, modified).	
	IEC 60439-5	NOTE Harmonized as EN 60439-5:1996 + A1:1998 (not modified).	
	IEC 60664-1	NOTE Harmonized as EN 60664-1:2003 (not modified).	
	IEC 60721-3-4	NOTE Harmonized as EN 60721-3-4:1995 (not modified).	
	IEC 61587-1	NOTE Harmonized as EN 61587-1:1999 (not modified).	
	IEC 61969-3	NOTE Harmonized as EN 61969-3:2001 (not modified).	

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

ZA	**ANNEX ZA (normative) — NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS** The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies. NOTE When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.	P

Publication	Year	Title	EN/HD	Year
IEC 60068-2-11	1981	Environmental testing Part 2: Tests - Test Ka: Salt mist	EN 60068-2-11	1999
IEC 60364 (mod)	Series	Electrical installations of buildings	HD 384/ HD 60364	Series
IEC 60364-4-43	2001	Part 4-43: Protection for safety - Protection against overcurrent	- [1)]	-
IEC 60529	- [2)]	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 [3)] 1993
IEC 60950-1 (mod)	2005	Information technology equipment - Safety Part 1: General requirements	EN 60950-1	2006
IEC 61643 (mod)	Series	Low-voltage surge protective device	EN 61643	Series
ISO 178	- [2)]	Plastics - Determination of flexural properties	EN ISO 178	2003 [3)]
ISO 179	Series	Plastics - Determination of Charpy impact strength	EN ISO 179	Series
ISO 180	- [2)]	Plastics - Determination of Izod impact strength	EN ISO 180	2000 [3)]
ISO 527	Series	Plastics - Determination of tensile properties	EN ISO 527	Series
ISO 3231	- [2)]	Paints and varnishes - Determination of resistance to humid atmospheres containing sulfur dioxide	EN ISO 3231	1997 [3)]

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

	Publication / Year / Title / EN/HD / Year ISO 4628-3 / - [2] / Paints and varnishes - Evaluation of degradation of paint coatings - Designation of intensity, quantity and size of common types of defect Part 3: Designation of degree of rusting / EN ISO 4628-3 / 2003 [3] ISO 4892-1 / - [2] / Plastics - Methods of exposure to laboratory light sources Part 1: General guidance / EN ISO 4892-1 / 2000 [3] ISO 4892-2 / - [2] / Part 2: Xenon-arc sources / EN ISO 4892-2 / 1999 [3] ISO 4892-4 / - [2] / Part 4: Open-flame carbon-arc lamps / – / – ISO 8256 / - [2] / Plastics - Determination of tensile-impact strength / EN ISO 8256 / 2004 [3] ISO 18173 / 2005 / Non-destructive testing - General terms and definitions / – / – [1] IEC 60364-4-43:1977 + A1:1997 (modified) are harmonized as HD 384.4.43 S2:2001. [2] Undated reference. [3] Valid edition at date of issue.	—
ZB	**ANNEX ZB (normative) – SPECIAL NATIONAL CONDITIONS (EN)** National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. NOTE If it affects harmonization, it forms part of the European Standard or Harmonization Document. For the countries in which the relevant special national condition apply these provisions are normative, for other countries they are informative.	P
(A11:2008)	In Annex ZB, **delete** the special national conditions for Finland, Norway and Sweden regarding Subclauses 4.1, 10.2 & D.3 and **add** "There are no special national conditions for this European Standard"	P
4.1	In **Finland, Norway** and **Sweden**, the temperature in winter may be extremely low. For OUTDOOR EQUIPMENT this will demand special design so that the equipment can withstand transport, erection and operation/service at temperatures down to -50 °C.	DELETED
10.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	DELETED
D.3	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	DELETED

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity** 1)
(see also separate test report EN/IEC 62368-1)					
Gasket	SONDERHOFF	FERMAPOR K31-A-9160-VP4/K31-B-81	Stripes 8x16mm	EN/IEC 60950-22	Tested in the appliance
Powder Coating	AXALTA	AE03054900520	EN 45545	EN/IEC 60950-22	Tested in the appliance
Supplementary information: TRI refuses any responsibility about information supplied by the customer contained in this test report 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment II : PHOTO DOCUMENTATION

Pictures_1 _EUT

Pictures_2_EUT

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

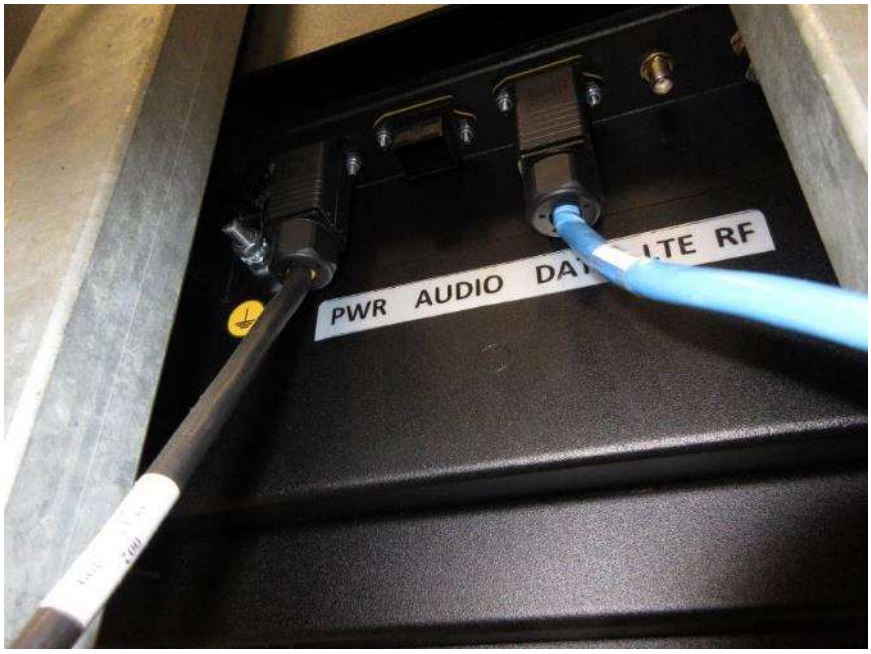
Pictures_3_EUT

Pictures_4_EUT

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

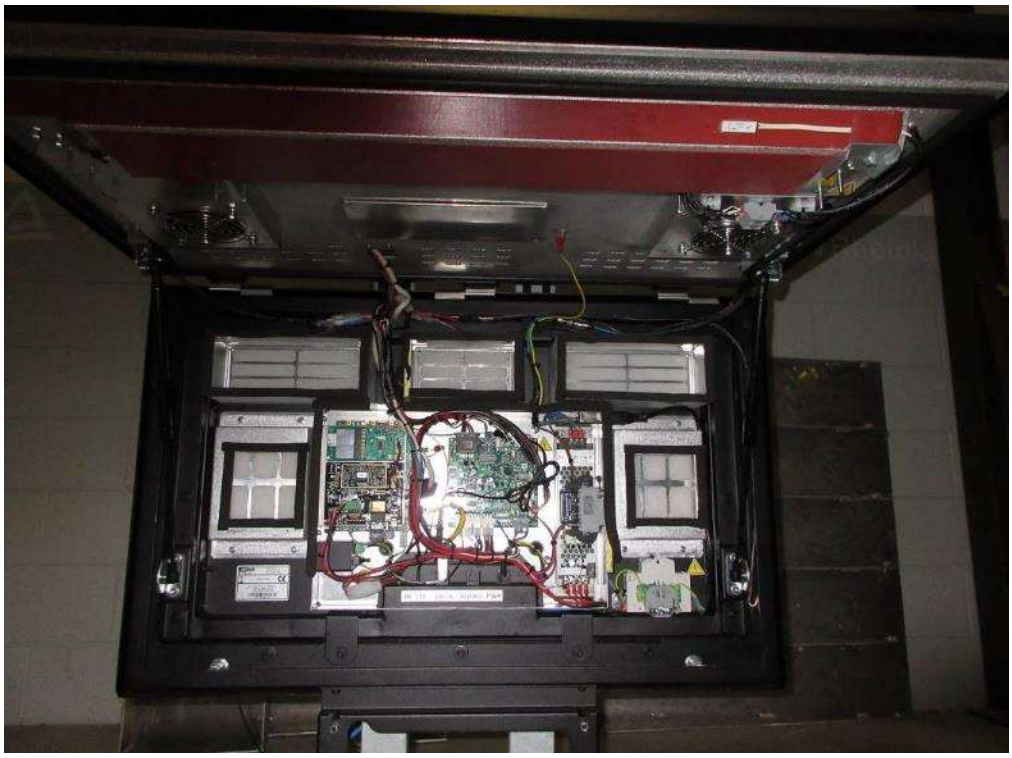
Pictures_5_EUT

Pictures_6_EUT

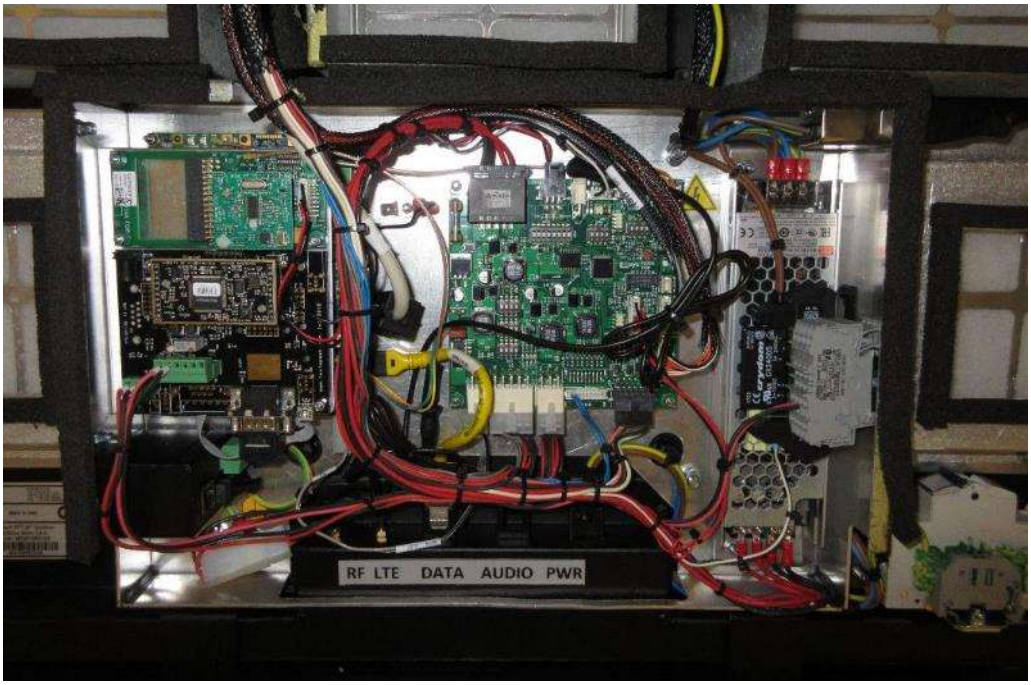


IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Pictures_7_ VIEW INTERNAL EUT

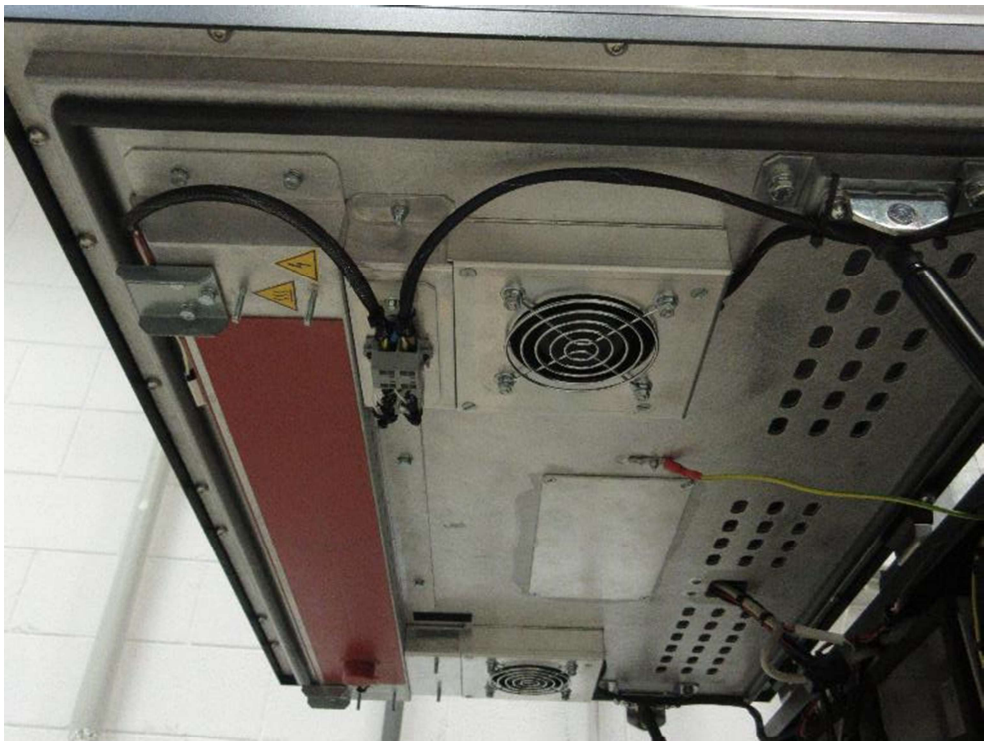


Pictures_8_ VIEW INTERNAL EUT



IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Pictures_9_VIEW INTERNAL EUT



Pictures_10_ VIEW INTERNAL EUT

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment III: GASKETS CUSTOMER DECLARATION

sonderhoff	Testreport	Author: Jan-René Klöver
		Date: 26.07.2017
Customer: Aesys S.p.A		Page 1

Dear Sir or Madam,

Hereby we declare that the gasket material FERMAPOR K31-A-9160-VP4 / K31-B-81 in a mixing ratio of 4:1, manufactured by Sonderhoff chemicals GmbH, was tested according to EN60950-22 Clause 8.5 (temperature ageing for 168h at 70°C).

The results are as followed:

	Standard	Initial value	After 168h at 70°C
Tensile Strength*	DIN EN 1798	390 kPa	382 kPa
Elongation at Break*	DIN EN 1798	210 %	214 %

*** gasket stripes 8 x 16 mm"**

According to the results, the Tensile Strength dropped to 98% of its initial value while the Elongation at break rose to 102% of its initial value.

If you have further questions, don't hesitate to contact us again.

i.A. Jan-René Klöver
(Customer application technician)

Important notes regarding the suitability of products

The description of the possible fields of use of our products as well as the technical data and values only have a general character and does not mean that a certain product can be used under all conditions in the respective field of use. In this respect, the stated field of use is not a binding specification or usage provision. Due to the great number of environment variables and their influences (e.g. temperature, test specimens, size, interaction with substrates, influence of machines, or the like) you as our customer must check whether the product is suitable for your specific field of use. We will be pleased to assist and advise you in this respect.

Sonderhoff Chemicals GmbH
Richard-Byrd-Straße 26
50829 Köln • Deutschland

Geschäftsführer
Axel Erken (Vorsitzender),
Uwe Beckermann, Kai Ellmer
Registergericht Köln, HRB 36059

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment IV: COATINGS CUSTOMER DECLARATION

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AXALTA

Direct phone
Telefon-Durchwahl

Direct fax
Fax-Durchwahl

Our ref
Unser Zeichen

Your ref / Ihr Zeichen	your letter dated / Ihre Nachricht vom	Date / Datum	02.10.2015

Conformity of Alesta® powder coatings relating to the fire protection standard DIN EN 45545.

Axalta Coating Systems herewith confirms that all Alesta® powder coatings materials, which are manufactured and placed on the market in the European Economic Area meet the DIN EN 45545 standard referring to the test criteria R1 and R7.

These are the series Alesta® AE, SD, EP, IE, AG, EE, HR, PU, ZF and ZN.

Certificate

By signing this document we confirm, that all powder coatings meet the DIN EN 45545 standard due to passing R1 and R7 examination.

Signed by:
Jörg Dederichs, Axalta Coating Systems Germany Product Management DACH and Central Europe

Signature

Dederichs

(Stamp)

Diese Information basiert auf unserem derzeitigen Kenntnisstand. Obgleich die Information in gutem Glauben weiter geleitet wird, kann hinsichtlich Vollständigkeit und Genauigkeit keine Gewähr übernommen werden. Für Schäden jeglicher Art, die aus der Verwendung dieser Information oder im Vertrauen auf diese Information entstehen, wird keine Haftung übernommen

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Holger Lassen, Dr. Matthias Vogt
Vorsitzender des Aufsichtsrates: Dr. Joseph Pearson